

AMERICAN CYANAMID CO.
WAYNE, NEW JERSEY 07470

PAGE 1

MATERIAL SAFETY DATA SHEET

MSDS NO. AG01992-9
CAS NO. 000298-02-2

EMERGENCY TELEPHONE: (201) 835-3100 (U.S.A.)

DATE: MAY 12, 1994

PRODUCT
IDENTIFICATION

TRADE NAME: THIMET^(R) 20G SOIL AND SYSTEMIC
INSECTICIDE LOCK'N LOADTM CLOSED
HANDLING SYSTEM

SYNONYMS: PHORATE; O,O-diethyl S-[(ethylthio)
methyl] phosphorodithioate

CHEMICAL FAMILY: Organophosphate

MOLECULAR FORMULA: C₇H₁₇O₂PS₃

MOLECULAR WEIGHT: 260.370

USAGE: INSECTICIDE

WARNING
STATEMENTS

DANGER!
FATAL IF SWALLOWED, INHALED, OR ABSORBED THROUGH THE
SKIN.
DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.
KEEP OUT OF REACH OF CHILDREN.
DO NOT BREATHE DUST.

INGREDIENTS

COMPONENT	CAS. NO.	%	PEL/TLV
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Inerts		80.00	None Established
Phorate	000298-02-2	20.00	0.05 mg/m ³ (skin) 0.2 mg/m ³ (STEL)

REFERENCE: Inerts None
Phorate ACGIH - 93-94

PHYSICAL
PROPERTIES

APPEARANCE AND ODOR: Brown to gray granules; mercaptan odor.

BOILING POINT: Not Applicable

MELTING POINT: Not Applicable

VAPOR PRESSURE: Not Applicable

BULK DENSITY: 50-56 lbs./cu. ft.

VAPOR DENSITY: Not Available

% VOLATILITY (BY VOL.): Not Available

OCTANOL/
H₂O Not Applicable

PARTITION COEF.:

PH: 4-7, dependent on carrier source

SATURATION IN AIR (BY VOL.): Not Applicable

EVAPORATION RATE: Not Available

SOLUBILITY IN WATER: Negligible

FIRE AND EXPLOSION HAZARD INFORMATION	FLASH POINT:	Not Applicable
	FLAMMABLE LIMITS (% BY VOL.):	Not Applicable
	AUTOIGNITION TEMP:	Not Applicable
	DECOMPOSITION TEMP:	Decomposes on prolonged heating at 120°C or higher.

FIRE EXTINGUISHING MEDIA:

Extinguish using an agent suitable for the surrounding fire. (Material itself does not burn or burns with difficulty).

FIRE CONTROL TACTICS:

Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing.

Keep unnecessary people away. Use as little water as possible. Dike area of fire to prevent pesticide run-off. Use spray or fog - solid stream may cause spreading.

Conduct fire fighting and rescue operations from upwind of the fire area. Evacuate people downwind who may come in contact with smoke, fumes, or contaminated surfaces. Do not decontaminate personnel or equipment, or handle broken packages or containers without protective equipment as specified in the Exposure Control Section. Decontaminate emergency personnel with soap and water before leaving the fire area.

Avoid breathing dusts, vapors and fumes from burning materials. Alert medical personnel to be ready to treat for pesticide poisoning. Control run-off water - if water enters a drainage system, advise the authorities downstream.

Pesticide is attached to non flammable clay particles but toxic fumes may be released.

NFPA HAZARD
RATING

(As Recommended by American Cyanamid Co.)

0 Least	1	Flammability
1 Slight	/ \	/ \
2 Moderate	3 0	Health Reactivity
3 High	\ /	\ /
4 Severe		Special

REACTIVITY DATA

STABILITY:	Stable
CONDITIONS TO AVOID:	Exposure to heat and/or strong oxidizers and alkalies.
POLYMERIZATION:	Will not occur
INCOMPATIBLE MATERIALS:	Strong alkalies and strong oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS:	Thermal decomposition may produce hydrogen sulfide, mercaptan, and oxides of carbon, sulfur and phosphorus.
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HEALTH HAZARD
INFORMATIONTOXICITY DATA AND
EFFECTS OF OVEREXPOSURE:ACUTE TOXICITY DATA:

The active ingredient in this product is an organophosphorus compound.

The acute oral LD₅₀ for male rats is 13.5 mg/kg and for female rats it is 5.1 mg/kg, which indicates that this product is highly toxic by ingestion in single doses.

The acute dermal LD₅₀ of this formulation ranges from 113 mg/kg in male rabbits and 86 (61-120) mg/kg, for female rabbits. The combined dermal LD₅₀ was 97 (79-119) mg/kg for both male and female rabbit, which indicates that this product is highly toxic by single skin applications.

This formulation is irritating to rabbit eyes and it is highly toxic by this means of exposure. Phorate is absorbed through ocular exposure and can produce systemic effects.

Inhalation Toxicity: Airborne phorate can be absorbed through the lungs to produce cholinesterase inhibition.

CHRONIC TOXICITY DATA

Mutagenicity: No mutagenic activity was observed in THIMET Technical (Phorate) by all test methods used. These included in vivo Bone Marrow Cytogenetics Rat Metaphase Analysis, Unscheduled DNA Synthesis, in vitro Chinese Hamster Ovary (CHO)/Hypoxanthine Guanine Phosphoribosyl Transferase (HGPRT) Mutation Assay, and Bacterial/Microsome Reverse Mutation (Ames) Test.

Teratogenicity: No teratogenic or fetotoxic effects were found at all dose levels tested in both rats and rabbits.

Carcinogenicity: No oncogenic effects were observed at any dose levels tested in mice and rats.

Phorate is not listed as a human carcinogen by the IARC, OSHA or NTP.

Note: All chronic toxicity testing is done on the technical material only. There is no information available on the toxicity of the formulations relative to that of the technical material.

EMERGENCY AND FIRST AID PROCEDURES:

CALL A PHYSICIAN AT ONCE IN ALL CASES OF SUSPECTED POISONING.

IF SWALLOWED: Drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Avoid alcohol. Get medical attention.

IF INHALED: Remove to fresh air. If victim is not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention.

IF ON SKIN: Wash thoroughly with soap and water. Remove contaminated clothing and shoes. Wash clothing and decontaminate shoes before reuse.

IF IN EYES: Immediately flush eyes with plenty of water. Get medical attention.

NOTE TO PHYSICIAN: Phorate inhibits acetylcholinesterase activity. Warning symptoms include weakness, headache, tightness in chest, blurred vision, nonreactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps. Give atropine intramuscularly or intravenously depending on the severity of poisoning, 4 mg. every 10 minutes until fully atropinized as shown by dilated pupils, dry flushed skin and tachycardia. Twenty to 30 mg or more may be required during the first 24 hours. Never give opiates or phenothiazine tranquilizers. Clear chest by postural drainage. Artificial respiration or oxygen may be necessary. Observe patient for at least 48 hours. Allow no further exposure to any cholinesterase inhibitor until cholinesterase regeneration has taken place as determined by blood tests. Pralidoxime chloride (2-PAM; PROTOPAM chloride) may be effective as an adjunct to atropine. Use according to label directions.

EXPOSURE
CONTROL METHODS

During formulation of this product, provide adequate ventilation and maintain permissible exposure limit below 0.05 mg/m³ or the use of a NIOSH approved toxic dust respirator if necessary.

Wear freshly-laundered, long-sleeved work clothing daily. Wear rubber boots or rubber shoe covering and gloves (rubber) and goggles while transferring from package to equipment.

(cont from pg.4)

Rubber gloves should be washed with soap and water after each use. Do not wear the same gloves for other work. Replace gloves frequently.

Administer a cholinesterase blood test program at workplace.

In case of contact, immediately remove contaminated clothing and wash skin thoroughly with soap and water. Launder clothing before reuse. Wash thoroughly with soap and water before eating or smoking. Shower at the end of the work day and change clothing.

Wear a face mask or other respiratory equipment while emptying bags into hopper. Pour downwind and allow as little free fall as possible while emptying bags into equipment. DO NOT BREATHE THE DUST.

SPILL OR LEAK
PROCEDURES

This material contains phorate. The decontamination solution for this material consists of 10% household bleach, 5% isopropyl alcohol, and 85% water.

Wear appropriate protective clothing and personal protective equipment. (See "Exposure Control".)

Keep away from drains, surface and ground water, and soil.

Keep all sources of ignition away from the spill, and avoid creating dusty conditions when handling this material. If dusting cannot be avoided, ground all equipment.

Shovel or sweep the spilled material into covered containers for proper disposal. (See "Waste Disposal".) If possible, try to reuse the material for its intended purpose.

Decontaminate the spill area and any tools or implements by rinsing several times with the decontamination solution. Contain and absorb this rinsate with insert absorbents and place into the same covered container as the spilled material.

Small spills to the soil can be shoveled directly into covered containers for disposal. In the event of a large spill, contact American Cyanamid for guidance on available clean-up options. Depending on the amount released to the environment, it may be necessary to notify the regulatory authorities.

If the spill occurred to a body of water, immediately notify the appropriate authorities downstream of the spill so that they can decide what if any further action is needed.

(cont from pg. 5)

WASTE DISPOSAL: To avoid disposal, all attempts should be made to use this product completely, in accordance with its registered use. If this is not possible, handle with care and dispose in a safe manner.

Follow all applicable community, national or regional regulations regarding waste management methods.

Keep all sources of ignition away and avoid creating dusty conditions when handling this product. If dusting cannot be avoided, ground all equipment.

Caution: This product contains phorate and is regulated in the United States as a hazardous waste. It is the ultimate responsibility of the waste generator to determine at the time of disposal whether this product and/or "empty" container residue meets any hazardous waste criteria.

Cyanamid's recommended disposal method for this product is incineration.

SPECIAL
PRECAUTIONS

HANDLING AND STORAGE:

Open dumping is prohibited. Make sure the hoppers are emptied while still in the field. Keep all unprotected persons out of operating areas.

Do not contaminate water, food, or feed by storage or disposal. Store in a secure, dry, well-ventilated separate room, building or covered area.

Not for use or storage in or around the home.

Keep away from sources of ignition and protect from exposure to fire and heat.

Segregate from oxidizers and incompatible materials listed in the Reactivity Data Section.

ADDITIONAL REGULATORY INFORMATION

SARA Title III DataSection 311 and 312 Hazard Categories

Immediate Health Hazard -	<u>Y</u>	Reactive Hazard -	<u>N</u>
Delayed Health Hazard -	<u>N</u>	Sudden Pressure Release Hazard -	<u>N</u>
Fire Hazard -	<u>N</u>		

Section 302 Extremely Hazardous Substances - PhorateSection 313 Toxic Chemicals - NoneCERCLA Reportable Quantity

Phorate - 10 lbs.

APPENDIX

ENVIRONMENTAL HAZARDS

This product is toxic to fish, shrimp, crab, birds, and other wildlife. Birds and other wildlife in treated areas may be killed. Keep out of lakes, streams, ponds, tidal marshes, and estuaries. Do not apply where run-off is likely to occur. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water by cleaning of equipment or disposal of wastes. Shrimp and crab may be killed at application rates recommended on the label. Do not apply where these are important resources. Apply this product only as specified on the label.

This pesticide is toxic to bees exposed to direct application. Applications should be timed to coincide with periods of minimum bee activity, usually between late evening and early morning.

THIMET^(R) IS A REGISTERED TRADEMARK OF THE AMERICAN CYANAMID COMPANY.

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE.

Last Revision Date: 2/1/91

SOURCE AND	SHEET NO.:	AG01992-9
DATE INFORMATION	DATE:	MAY 12, 1994
